Over the last few years, the importance of venture capital in fostering new firms has grown tremendously, not only in the U.S., but also in the international context, both in developed and in emerging economies. In recent years, venture capital (VC) investments across national borders have started to trend upwards. Foreign or cross-border investment in venture capital markets has increased from 10% of all venture capital investments in 1991 to 22.7% in 2008 (based on number of venture capital investments). An important driver of this increase is the significant upward trend in international venture capital investments in emerging nations over this time period. The number of venture capital investments by international investors as a fraction of total venture capital investments in emerging nations increased from 8.7% in 1991 to 56% in 2008. There has also been an increase, although more modest, in the number of international venture capital investments as a fraction of all venture capital investments in developed nations over the same time period (10.1% in 1991 to 20% in 2008). While the venture capital industry originated in the US, a number of non-US economies have developed their own venture capital industries, with a significant number of local venture capitalists investing in entrepreneurial firms in their own countries. At the same time, the Internet and other technologies have had a significant impact on financial markets and intermediaries such as venture capitalists, private equity firms, and investment banks (as well as commercial banks) over the last decade and a half. However, there has been relatively little research on the effects of
these two powerful forces, namely, globalization and technological innovation, on the role of venture capitalists and other intermediaries in fostering the growth of young firms.¹ It is in this context that I agreed to edit a special issue of the *Journal of Economics and Business* on Venture Capital, Private Equity, IPOs, and Banking. My objective in this introduction is to place the seven articles in this special issue in perspective, and outline an agenda for future research.

One interesting question in the above context is how the role of a venture capitalist in fostering entrepreneurial firms has evolved over time. One important contribution of venture capitalists that has been talked about by practitioners is the role venture capitalists play in helping young firms create value in the product market, by helping them to develop high quality management teams, contacts and credibility with suppliers and customers, and in improving their efficiency overall. While there has been little evidence to support these anecdotes, significant evidence has been developed recently indicating that venture capitalists indeed helped to strengthen firm’s management teams (see, e.g., Hellmann and Puri (2002) or Chemmanur, Simonyan, and Tehranian (2010)), and to improve their operating efficiency, as measured by their Total Factor Productivity (TFP) overall (see Chemmanur, Krishnan, and Nandy (2009)). There is also some evidence that venture capitalists, particularly corporate venture capitalists (who are affiliated to various corporations, as against independent venture capital firms) spur innovation in corporations, as measured by the patents obtained by these firms (see Chemmanur, Loutskina, and Tian (2009)). Clearly, we need to develop a much better understanding of precisely how venture capitalists contribute to the success of young firms, and ways in which

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¹ There is, however, a small but emerging literature on international investments in venture capital: see, e.g., Jeng and Wells (2000), who study the determinants of cross-country venture capital deals; Chemmanur, Hull, and Krishnan (2010), who study how international and local venture capitalist interact to invest in entrepreneurial firms and the effectiveness of such interaction in generating successful exits; or Lerner and Schoar (2005), who study the contracting of private equity deals in various countries.
different kinds of venture capitalists (for example, corporate venture capitalists, independent
venture capitalists, or even the government as a venture capitalist) may help such entrepreneurial
firms in their own unique way. This may also help us distinguish between situations in which
venture backing may help entrepreneurial firms, and those in which such backing may be
detrimental to the long-term development of these firms.

A second channel through which venture capitalists can help the entrepreneurial firms
they back is in dealing with subsequent investors as well as other financial intermediaries, and
ultimately, with the IPO market if (and when) they go public. There has long been significant
evidence that venture backed firms are associated with higher reputation underwriters and
receive a greater extent of analyst coverage compared to non-venture backed firms (see, e.g.,
Megginson and Weiss (1991) and Chemmanur and Loutskina (2007)). However, one piece of
received wisdom regarding the role of venture backing in the financial market has now become
controversial. This is the notion of venture capital “certification.” As late as the early nineties, it
was conventional wisdom that venture backed IPOs are associated with a lower degree of
underpricing than non-venture backed firms. For example, Megginson and Weiss (1991)
document that venture capital (VC) backed IPOs were less underpriced than non-VC backed
IPOs during 1983-1987, attributing this difference to venture capital “certification.” Venture
capital certification reflects the notion that venture capitalists, being repeat players in the IPO
market, are concerned about their reputation in that market, so that they price the equity in the
IPOs of firms backed by them closer to intrinsic value (and credibly convey this fact to the IPO
market). More recent papers have, however, called into question the notion that venture backed
IPOs are associated with a smaller extent of underpricing compared to non-venture backed firms:

see, e.g., Francis and Hasan (2001) or Lee and Wahal (2002), who document that, between 1980

2 For a recent empirical study on the government acting as venture capitalist, see Brander, Du, and Hellmann (2010).
and 2000, IPOs of VC backed firms were, in fact, *more* underpriced than those of non-VC backed firms. A number of other papers have also presented similar evidence: see, e.g., Loughran and Ritter (2003).

This above inconsistency of the evidence based on data prior to the 1990s with that after the 1990s in terms of the relative magnitudes of the underpricing of venture backed versus non-venture backed IPOs has reopened the debate not only about the role of venture backing in IPOs, but also regarding the appropriateness of IPO underpricing as a measure to assess the role of intermediaries such as venture capitalists. This is because “underpricing” (or the initial returns in an IPO) simply reflects the price rise of a firm’s equity from the IPO offer price to the first day closing price in the secondary market, so that it is affected not only by the pricing of this equity in the IPO, but also by the pricing of this equity at the close of the first trading day in the secondary market. This implies that, for underpricing to be a meaningful measure in any study of the economic role of venture backing, one has to make the crucial (and rather strong) assumption that the closing price of a firm’s stock on the first day of secondary market trading is not affected by venture backing and is equal to the intrinsic value of that stock. Thus, if venture backing affects not only the IPO offer price of a firm but also the first day secondary market closing price then underpricing is no longer useful in determining the economic role of venture backing in IPOs.3

3 Apart from the evidence provided by academic studies such as Ritter (1991) documenting the long-run underperformance of IPOs, it is easy to see from casual observation that the first trading day secondary market closing price of IPO shares is significantly different from intrinsic value during some time periods. For example, during the internet bubble period of 1998–2000 a number of IPOs were priced far above their intrinsic value, only to climb much higher on the first trading day of trading in the secondary market. It seems obvious (at least in hindsight) that while these IPOs were highly underpriced (in the sense that their initial returns were very large), they were also significantly overvalued (relative to intrinsic value). The controversy over “laddering,” where institutional investors pre-commit to buy additional IPO shares in the secondary market in exchange for larger allocations in IPOs, also highlights the possibility of the secondary market price deviating from intrinsic value (see, e.g., *WSJ*, Feb 2004, “Morgan Stanley, Goldman Fined for IPO Practices”).
Driven by the above inconsistency in the empirical evidence and doubts about the appropriateness of the role of venture capitalists and other intermediaries in the IPO market, in a recent paper (Chemmanur and Loutskina (2007)) I and a co-author use an alternative measure, namely, the offer price to intrinsic value ratio, to re-assess the role of venture capitalists in the IPO market. Based on this empirical analysis, we came to the conclusion that, based on the price to intrinsic value measure (and regardless of whether one uses recent evidence or evidence prior to the 1990s), the role of venture capitalist in the IPOs of firms is not that of certification but primarily that of marketing the IPO to various financial market players such as analysts, investment banks, and institutional investors in order to obtain higher valuations (both in the IPO as well as in the secondary market) for the firms they back.\(^4\) We came to the above conclusion because the price to intrinsic value ratio was greater for venture backed compared to non-venture backed IPOs, both before the 1990s and subsequently. We refer to this role of intermediaries in the IPO market as the “market power” hypothesis. In a related paper (Chemmanur and Krishnan (2008)), I and another co-author assess the role of investment banks as IPO underwriters using, again, the price to intrinsic-value ratio measure; we find that the role of investment banks is also that of marketing IPOs rather than certification, since the price to intrinsic value ratio is greater for higher reputation underwriter backed IPOs compared to lower reputation underwriter backed IPOs, both in the IPO and in the secondary market.\(^5\)

\(^4\) For a discussion of how such higher valuations for venture backed IPOs may come about, see Chemmanur and Loutskina (2007).

\(^5\) Similar to that in the case of the venture capital backing of IPOs, there has also been a reversal in the evidence regarding the relationship between underwriter reputation and IPO underpricing. While the evidence prior to the 1990s shows that IPOs underwritten by higher reputation investment banks as underwriters are less underpriced compared to those underwritten by lower reputation underwriters (thus supporting the idea of “certification” through investment bank reputation), this relationship has reversed when one conducts the same comparison using data from the 1990s or after: see, e.g., Chemmanur and Krishnan (2008).
Of course, one way to shed further light on the above controversy regarding the role of venture capitalists and investment banks in IPOs is to look at the international evidence. Two papers in this special issue present some further evidence regarding the relationship between venture backing (and underwriter reputation) and IPO underpricing in an international context. The article by Arikawa and Gael in this issue studies the IPOs of venture backed firms in Japan. In particular, they show that, when one of top three securities firms in Japan is the underwriter of a firm’s IPO (i.e., the underwriters are of higher reputation), the extent of underpricing (initial return) is in fact greater. Further, consistent with an earlier paper by Hamao, Packer, and Ritter (2000), they find no evidence of a relation between VC backing and IPO initial return. Thus, their evidence seems to contradict the certification hypothesis. The article by Elston and Yang in this issue studies the underpricing of venture backed IPOs in Germany. In particular, they study the relationship between the extent of venture capital and other insider ownership and IPO underpricing using data from Germany’s Neuer Markt during 1996-2001. They find no significant relation between venture capital ownership and IPO underpricing, again contradicting the certification hypothesis. Thus, while both Japan and Germany offers economic settings significantly different from that prevailing in the U.S. and the U.K., their evidence is thought-provoking, and indicates that one has to thoroughly re-examine the certification hypothesis. Following the arguments I made earlier and detailed in Chemmanur and Loutskina (2007) and Chemmanur and Krishnan (2008), it also suggests that perhaps IPO underpricing may not be an appropriate measure at all for assessing the role of financial intermediaries in IPOs, and that we may need to develop new measures that are more appropriate.

Another interesting research question that has become important in recent years is the return performance of investments in venture capital and private equity funds. While research in
this area had been limited in earlier years by the lack of availability of reliable data, in recent years there has been some very interesting research on the returns to investments in venture capital funds: see, e.g., Cochrane (2005). In another interesting paper, Kaplan and Schoar (2005) examine the relation between past and future performance in venture capital funds, and find evidence of performance persistence: i.e., follow-on funds raised by VCs whose initial funds perform well also perform well (based on returns delivered to investors). Finally, Lerner, Schoar, and Wong (2005) find that all investors in venture capital funds are not created equal: while some “smart” investors (such as private endowments) obtain much higher returns than other investors (such as banks and investment advisers), perhaps because they are better at picking winning funds.

Two articles in this issue deal with the above topic of returns to investors in venture capital and private equity funds, respectively. The first article, by Obrimah and Prakash, studies the exit performance of venture capital firms (as measured by the proportion of portfolio companies that exit through an IPO or acquisition relative to the average for their peer venture capital firms that commenced investment as the venture capital firm whose performance is being measured), and evidence of performance reversal between the short run (first five years of business) and the long run (subsequent to the first five years). They argue that this may be due to changes in attitudes toward risk by some venture capital firms: that is, superior short-run performers that attribute their short-run success to their managerial and monitoring abilities rather than the quality of their project portfolios may adopt riskier portfolio strategies in the long run, resulting in inferior long-run performance. The second article in this issue, by Stotz, Wanzenried, and Döhnert, studies the returns to private equity investors who invest in the publicly traded equity of firms through open market (stock exchange) purchases. They find that
such investors obtain a positive abnormal stock return (though this abnormal performance is mainly confined to investments of these investors in firms listed in their home country). They attribute this superior investment performance to the ability of private equity investors to monitor firm management and influence their strategic decisions, thus enhancing long-run firm value. The above area of research into the returns to investing in venture capital and private equity funds, and the returns to different categories of investors, are likely to pay rich dividends in the future, especially since, in the wake of the financial crisis (and the significant losses institutions incurred on their investments in these funds), many institutions seem to have changed their investment policies in these funds. The financial crisis may also have changed venture capitalists’ investment strategies in entrepreneurial firms as well.6

It is widely conjectured among practitioners as well as academics that venture capitalists and private equity investors have a significant monitoring role on private equity investors, with some evidence to back up this conjecture (see, e.g., Chemmanur, Krishnan, and Nandy (2008) for evidence on the ability of venture capitalists to help increase the total factor productivity of private firms). However, it is not clear how well venture capitalists interact with other mechanisms that may serve to discipline firm management. For example, the market for corporate control is an external mechanism that can help to discipline firm management, while better structured corporate boards and well-designed corporate charters are internal mechanisms that can also help to discipline firm management. The article by Boulton in this issue sheds light on how venture capitalists affect one external force through which firm management can be

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6 See, e.g., the article in the Wall Street Journal (Sept 10, 2010), “Harvard Endowment Gets a Middling Grade,” which quotes the Harvard endowment manager, Jane Mendillo, as being disenchanted with private equity, despite a 16.2% return in the asset class. Ms. Mendillo said that over the past 10 years the field “has become more and more crowded—with capital, with managers, and with investors.” It further quoted her as predicting that returns would be more muted going forward and that future investments in private equity would stress quality, rather than quantity. "We anticipate the number of active relationships within our private equity and venture capital portfolio will be reduced, while the concentration will be increased in our highest conviction managers."
disciplined, namely, the market for corporate control, and how venture capitalists influence firms’ exposure to this market by influencing their choice of state to incorporate (which affects the state anti-takeover laws that these firms are subject to). He finds that venture capital backed IPO firms are more likely to incorporate in a takeover-friendly state such as Delaware and that firms incorporated in takeover-friendly states are more likely to be acquired in the years immediately after IPO. He also shows that such venture backed firms have higher Tobin’s Q values. Given the relative paucity of research in this area, it promises to be a very productive area for future research.

I now turn to issues in banking. While somewhat orthogonal to the papers and research areas I have discussed so far, the two papers in this issue dealing with topics in banking provide fertile areas for future research. The first article in banking in this issue, by Roberts and Yuan, deals with the relation between the institutional investor ownership of a firm’s equity and its bank loan spreads. They find that the presence of institutional ownership reduces bank loan spreads, interpreting this as support for monitoring by institutions serving as a useful complement to bank oversight. There is, however, an alternative mechanism through which the presence of institutional investor ownership can affect bank loan spreads. This is through screening: there is significant recent evidence in the context of IPOs as well SEOs that institutional investors are able to obtain information superior to that of retail investors about firms making initial public offerings (see Chemmanur and Hu (2010)) and seasoned equity offerings (Chemmanur, He, and Hu (2009)). Thus, if the presence of significant institutional ownership conveys to the banks making the loan that a firm is likely to have better future performance, this will reduce bank loan spreads. It would be interesting in future research to distinguish between the above two effects, and also study the increasing number of other
situations where banks and institutional investors interact. For example, a recent development in the syndicated loan market has been the arrival of institutional investors, including hedge funds and private equity funds as lenders. While there has been some recent evidence (see, e.g., Nandy and Shao (2010)) showing that such institutions are lenders of the last resort, clearly much more research is needed in this area.

Another article in this issue, by Nandy, studies why firms denominate bank loans in foreign currencies. Using two datasets, consisting of syndicated loans by U.K. and Canadian firms, respectively, he finds significant evidence that firms that have substantial foreign sales are the ones that have a higher probability of borrowing in that foreign currency. He interprets this finding as supporting the notion that firms denominate loans in foreign currencies to benefit from the “natural hedge” that such foreign currency loans provide (when they obtain a significant fraction of their revenue in these currencies). Clearly, the broader area of financing in foreign currencies (by issuing equity, debt, convertible debt, or other securities) is likely to be a productive topic for future research. In addition to the hedging motive studied in the article in this issue by Nandy, other motivations may also be driving firms to denominate their external financing in foreign currencies and need to be investigated further. Some of these motivations may be tax considerations, differences in the cost of finance (equity, debt, or convertible debt) across currencies, and the desire to speculate. In fact, it may be optimal for corporations to design new securities specifically aimed at foreign currency financing (there have been already some initial attempts in this direction).

In summary, the articles collected in this special issue have considerably enhanced our understanding of the role of venture capitalists, private equity firms, investment banks and commercial banks in providing financing to new (as well as seasoned) firms and in fostering
their future growth. Yet, as I have pointed out above, this research has also raised a number of new questions to be answered, some of which I have discussed above. My hope in the above introduction is to encourage others to attempt to answer at least some of these questions through their future research.

In conclusion, I would like to thank several colleagues and former students for their help in editing this special issue, either by serving as referees for various articles, or by giving me helpful comments or suggestions. They are Onur Bayar, of the University of Texas at San Antonio; Shan He, of Louisiana State University; Jie He, of the University of Georgia at Athens; Karthik Krishnan, of Northeastern University; Xi Li, of Boston College (visiting scholar); Elena Loutsksina, of the University of Virginia (Darden School); Debarshi Nandy and Gordon Roberts, both of York University; Karen Simonyan, of Suffolk University; and Xuan Tian, of the University of Indiana, Bloomington. Special thanks to Ken Kopecky, the Executive Editor of the JEB, for inviting me to edit this special issue, and for his help and advice while I was editing this special issue.
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